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| 10/699,603 | 10/31/2003 | Josh Judd | 112-0139US | 9954 |

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EXAMINER

ADHAMI, MOHAMMAD SAJID

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| ART UNIT | PAPER NUMBER |
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2616

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|---------------------------------------|-----------------------------------|--|
| Office Action Summary | Application No. 10/699,603 | Applicant(s) JUDD, JOSH | |
| | Examiner Mohammad S. Adhami | Art Unit 2616 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-72 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-72 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: On Pg.1, the serial number of the related application is missing.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-18,21-25,32,42,43,50, and 55-72 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1 and 55, the language "and about each of the plurality of switching units and interconnections when a frame traverses multiple switching units" is confusing. It is unclear what this statement relates to and seems incomplete.

In claims 6,7,24,25,42,43,60, and 61 "words" appears out of context and has not been previously mentioned.

In claims 14,32,50, and 68, "the true destination address" appears out of context. What is the "true destination address"?

In claim 21, it is unclear if the claim depends from claim 19 or claim 20.

Claims 2-5,8-13,15-18,22,23,56-59,62-67 and, 69-72 are rejected
because they depend from rejected claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1,8-13,18,19,26-31,36,37,44-49,54,55,62-67, and 72 (as best understood) rejected under 35 U.S.C. 103(a) as being unpatentable over Perlman (US 5,844,902) in view of Mor (US 6,917,986).

Re claims 1,19,37 and 55:

Perlman discloses *a first and second node device connected to a fabric* (Fig.1 ref.100 and 102 are node devices connected to a fabric).

Perlman further discloses *a first and second switch coupled* (Fig.1 ref.104,106,108,1001,112,114 where the bridges are switches).

Perlman further discloses *a plurality of ports configured to receive and transmit frames* (Fig.1 ref.104,106,108,1001,112,114 where the bridges contain ports that receive and transmit messages).

Perlman further discloses *a fabric manager coupled to the ports to obtain the received frame and provide a frame to be transmitted* (Abstract "Messages

received from a first LAN are forwarded to a second LAN" where the bridge contains a fabric manager).

Perlman further discloses the fabric manager configured to add information to the frame, the information including receive and transmit port identity and switch identity (Col.3 lines 31-33 "a header is attached to the message indicating the address of the source end system and the destination end system" and Col.5 lines 56-64 when a bridge receives an explorer message, the bridge modifies the message by attaching an indication of the LAN number and bridge number through which the message has passed, as well as any other desired information and then forwards the modified version to all connected LANs).

Perlman further discloses the fabric manager adding information about each of the plurality of switching units and interconnections when a frame traverses multiple switching units (Col.3 lines 31-33 "a header is attached to the message indicating the address of the source end system and the destination end system" and Col.5 lines 56-64 when a bridge receives an explorer message, the bridge modifies the message by attaching an indication of the LAN number and bridge number through which the message has passed, as well as any other desired information where information about the switch and ports is also information about the switching units).

Perlman does not explicitly disclose a plurality of switching units coupled to the ports so that a frame traverses multiple switching units in the switch.

Mor discloses a plurality of switching units coupled to the ports so that a frame traverses multiple switching units in the switch (Fig.2A ref.26,27,28 are switching units coupled to ports ref.36 where the switching units together comprise a multi-tier switch).

Perlman and Mor are analogous because they both pertain to network communications.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Perlman to include switching units coupled to ports so that a frame traverses multiple switching units in a switch as taught by Mor in order to provide central control and connect network devices to a network.

Re claims 8,9,26,27,44,45,62, and 63:

Perlman discloses *the fabric manager adding information to the frame when the frame is traveling from the original source to the original destination and from the original destination to the original source* (Col.5 lines 56-62 when a bridge receives an explorer message, the bridge modifies the message by attaching an indication of the LAN number and bridge number through which the message has passed, as well as any other desired information).

Re claims 10,28,46 and 64:

Perlman discloses *a node device connected to a port and the fabric manager transmitting the frame to the node device* (Fig.1 ref.100 and 102 are node devices connected to ports and Abstract "Messages received from a first

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LAN are forwarded to a second LAN" where the bridge contains a fabric manager).

Re claims 11,12,29,30,47,48,65, and 66:

Perlman discloses *the fabric manager selecting a port to transmit the frame based on source routing information contained in the frame* (Col.3 lines 31-33 "a header is attached to the message indicating the address of the source end system and the destination end system" and Col.3 lines 54-55 "Scheme which use this technique are known as "source routing bridges").

Re claims 13,31,49, and 67:

Perlman discloses *using normal routing rules if the source routing information does not indicate a device directly connected to the switch* (Col.3 lines 38-40 "Each end system on the LAN, upon receiving this message, determines if its address is Y, and if so, the end system reads the message" otherwise the messages is forwarded on as disclosed above using normal routing rules).

Re claims 18,36,54, and 72:

Perlman discloses *determining if a switch is the source of the frame and if so, capturing the frame and not further transmitting it* (Col.3 lines 38-40 "Each end system on the LAN, upon receiving this message, determines if its address is Y, and if so, the end system reads the message" otherwise the messages is forwarded on as disclosed above using normal routing rules where once a

message is returned to the source, it is captured by that source and not further transmitted).

6. Claim 2-7,20-25,38-43, and 56-61 (as best understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over Perlman in view of Mor as applied to claims 1,19,37,and 55 above, and further in view of Soumiya (US 6,671,257).

Re claims 2-7,20-25,38-43, and 56-61:

As discussed above, Perlman meets all the limitations of the parent claim.

Perlman further discloses *information including the link cost of a link* (Col.5 lines 40-43 "The explorers may also accumulate other data, such as the maximum packet size along the path followed or the "cost" (expediency) of those paths").

Perlman does not explicitly disclose *the information including transmit and receive rates based on a first defined period and a second defined period that is greater than the first defined period and the number of frames and words transmitted and received.*

Soumiya discloses *the information including transmit and receive rates based on a first defined period and a second defined period that is greater than the first defined period and the number of frames and words transmitted and received* (Fig.26 ref. 8~9 is a rate field, Col.26 lines 21-23 the rate changing unit may change the explicit rate that the rate calculating unit calculates at a predetermined ratio and Col.35 lines 21-36 the prolongment of the observation period means that an interval between ER calculation times becomes longer.

The capability for calculating the ER in an observation period which is shorter than a specified observation period and Col.7 lines 27-28 "an arrived cell number counter for counting a number of arrived cells in correspondence with an output channel" where calculating the transmission rate also contains information about the amount of frames and words transmitted).

Perlman and Soumiya are analogous because they both pertain to network communications.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Perlman to include rate information as taught by Soumiya in order to more efficiently choose a path for transmission and to minimize congestion.

7. Claims 14,16,32,34,50,52,68, and 70 (as best understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over Perlman in view of Mor as applied to claims 1,11,19,29,37,47,55,and 65 above, and further in view of Fredericks (US 6,347,334).

Re claims 14,16,32,34,50,52,68, and 70:

As discussed above, Perlman meets all the limitations of the parent claim.

Perlman does not explicitly disclose *a fibre channel switch, a frame addressed to a well known address, determining the true destination address by retrieving data from the payload, and the frame being an extended link service frame.*

Fredericks discloses *a fibre channel switch, a frame addressed to a well known address, determining the true destination address by retrieving data from*

the payload, and the frame being an extended link service frame (Col.1 lines 29-30 “The Fibre channel switch” and Col.6 lines 29-31 “the RNID ELS message is sent to the Fabric Controller at the address hex “FFFFFFD” as is well known” and Table 1 and Col.5 lines 45-46 “The first word in the payload specifies the Command Code”).

Perlman and Fredericks are analogous because they both pertain to network communications.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Perlman to include a fibre channel switch and ELS message as taught by Fredericks in order to use a standard network setup and standard and well-known messaging.

8. Claims 15,33,51, and 69 (as best understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over Perlman in view of Mor as applied to claims 1,19,37,and 55 above, and further in view of Lee (US App. 2003/0099194).

Re claims 15,33,51, and 69:

As discussed above, Perlman meets all the limitations of the parent claim.

Perlman does not explicitly disclose *transmitting frames over a plurality of equal cost routes*.

Lee discloses *transmitting frames over a plurality of equal cost routes* (Para.[0005] “partially use a number of shortest paths having the same cost, that is, an equal cost multipath”).

Perlman and Lee are analogous because they both pertain to network communications.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Perlman to transmit data over equal routes as taught by Lee in order to balance the load on the paths and reduce congestion.

9. Claims 17,35,53, and 71 (as best understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over Perlman in view of Mor as applied to claims 1,19,37,and 55 above, and further in view of Hongal (US App. 2005/0053006).

Re claims 17,35,53, and 71:

As discussed above, Perlman meets all the limitations of the parent claim.

Perlman does not explicitly disclose *if a switch is the original destination of a frame, then modifying the frame to return it to the original source.*

Hongal discloses *if a switch is the original destination of a frame, then modifying the frame to return it to the original source* (Para.[0030] “The source MAX address is set to the system MAC address of the target network node (i.e. the target MAC address)” and “the destination MAC address in the frame’s header could be set to the originator MAC address”).

Perlman and Hongal are analogous because they both pertain to network communications.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Perlman to include modifying the frame to return to the

original source as taught by Hongal in order to return information about a path to the source and therefore allow the source to choose an optimal path.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wang (US 6,538,997) and Albert (US 6,775,692) show modifying a packet as it traverses a network. Fichou (US 6,687,228) shows modifying transmission rate information and sending a cell backwards. Klotz (US App. 2004/0057389) shows ELS, fibre channel switch, and well known address. Wang (US App. 2004/0196787) and Feldman (US 6,055,561) show equal cost multi-path routing.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammad S. Adhami whose telephone number is (571)272-8615. The examiner can normally be reached on Monday-Friday 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571)272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MSA 5/21/2007



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